

In the Claims:

Please amend Claims 1-4 and 12, and add new Claim 14 as indicated below.

The status of all pending claims is as follows:

1. (Currently Amended) A magnetic recording and/or reproducing apparatus comprising:

equalization means for equalizing a signal sequence which is reproduced from a magnetic recording medium and outputting an equalized waveform; and

conversion means for converting the equalized waveform into a maximum likelihood sequence by carrying out metric calculation based on average values of the <sup>level</sup> equalized waveform. waveform in vicinities of a positive signal level, a negative signal and a zero signal level.

*S* 2. (Currently Amended) The magnetic recording and/or reproducing apparatus as claimed in claim 1, claim 12 further comprising:

error an error detection and correction means for carrying section configured to carry out an error detection and an error correction with respect to the maximum likelihood sequence using a parity bit,

said error detection and correction means section carrying out the error correction by comparing a sequence which is obtained by convolution of the maximum

likelihood sequence and the average values of the equalized waveform, with the equalized waveform.

*V8.* (Currently Amended) The magnetic recording and/or reproducing apparatus as claimed in claim 1, further comprising:

*B* memory means for storing a memory section configured to store a conversion table which includes the average values of the equalized waveform.

*3 A.* (Currently Amended) The magnetic recording and/or reproducing apparatus as claimed in claim *3*, further comprising:

control means for updating a control unit configured to update said conversion table at an arbitrary timing.

*C* 5-11. (Cancelled)

*4 12.* (Currently Amended) A magnetic recording and/or reproducing apparatus comprising:

an equalization section which carries- configured to carry out an equalization with respect to a signal sequence reproduced from a magnetic recording medium, and outputs to output an equalized waveform; and

a conversion section which converts- configured to convert the equalized waveform into a maximum likelihood sequence by carrying out metric calculation based on average values of the equalized waveform. waveform in vicinities of a positive signal level, a negative signal level and a zero signal level.

13. (Cancelled)

14. (New) A magnetic recording and/or reproducing apparatus comprising:

an equalization section configured to equalize a signal sequence which is reproduced from a magnetic recording medium and to output an equalized waveform;

a conversion section configured to convert the equalized waveform into a maximum likelihood sequence by carrying out a metric calculation based on average values of the equalized waveform; and

an error detection and correction section configured to carry out an error detection and an error correction with respect to the maximum likelihood sequence using a parity bit,

said error detection and correction section carrying out the error correction by comparing a sequence which is obtained by convolution of the maximum likelihood sequence and the average values of the equalized waveform, with the equalized waveform.